The Brancker Memorial Lecture

Buildings and Runway Capacity : No Airport Yet Big Enough

AT a meeting of the Institute of Transport at the Institution of Electrical Engineers on February 16th, Mr. J. W. S. Brancker, M.Inst.T., manager of the Eastern Division of B.O.A.C., delivered the 1948 Brancker Memorial Lecture. His subject was "Airport Buildings," and he made it clear at the outset that he would omit the complicated question of hangars, control towers and such-like buildings and concentrate on those for passengers and cargo. "High block to block speeds," said Mr. Brancker, "will be completely nullified if delays occur in terminal handling." Owing to the comparative permanence of buildings, badly designed structures would handicap speed, economy and manpower for a long time to come, besides giving bad impressions to travellers arriving in these islands.

In a review of the history of airport buildings the lecturer said that in the past there had been a tendency to regard exterior appearance and technical requirements as more important than traffic considerations; also it was as logical to crowd buildings round a central control tower as to try to construct a London railway terminus around a main signal box. In the future more provision must be made for expansion because of the difficulty of forecasting the volume of air traffic at peak periods several years ahead. Many of the more modern airport buildings were already inadequate for the traffic they now had to handle, resulting in congestion and delays. "To my knowledge," said Mr. Brancker, "no airport and no building yet constructed for civil aviation has ever been found to be big enough after even four or five years' use."

Mr. Brancker then proceeded to outline the requirements for airport terminal buildings. Theoretically with a well-organized flow of traffic the passenger would only catch a fleeting glimpse of the elevations and was interested entirely in the facilities and comforts he found inside. The layout must prevent congestion on the loading apron, that is, space must be provided for the aircraft themselves; next passengers and cargo should not have to be moved large distances to and from the aircraft; the use of vehicles for this purpose was costly and wasted time. Simple buildings were needed in the interests of efficiency, to permit almost automatic passenger-flow with a minimum number of guides and controlling staff. Other important features were: the possibility of expansion to meet increased traffic in the future; and, by no means least, the comfort and weather protection when embarking or disembarking; initial, operational and maintenance costs.

In dealing with the size and layout of the airport buildings, it was stated that the capacity of a terminal building must be a function of the runway capacity of the airfield, otherwise it might be impossible fully to use the latter because the buildings were too small or vice versa. Allowance had to be made for a build-up of static traffic due to delays. The formalities for passengers on international services could be listed as follows: ticket check, baggage check, passport control, customs, medical, loading and unloading baggage, and embarkation or disembarkation. Although these might be simplified eventually, for the time being they should be catered for when evolving new designs.

The lecturer then gave a number of suggestions for meeting these requirements. The best method of achieving speed in handling international traffic was to keep each service entirely separate, so that it was unaffected by others moving at approximately the same time. A logical step would be to construct buildings as a number of units, each capable of dealing with about 35 passengers, either incoming or outgoing, and each containing sufficient room for the execution of all formalities. Clearance through such units should take between 15 and 20 minutes. It was suggested that the building composed of these units should be arranged in the shape of a wide "U" with a group of general buildings at the centre of the bend, the scheme being to draw up the aircraft within the arms of the "U" and surface transport on the outside of them. This system was likened to that under which a railway station-master allocated platforms to particular trains, and in a similar way indicator boards would be used to guide the public to their appropriate unit. Teams of customs, immigration and health officials, together with a handling team provided by the operator of the particular service, would move from unit to unit to complete the necessary formalities.

After summing up the advantages of the unit scheme as compared with one large building, Mr. Brancker turned to the freight and baggage aspect of airport buildings. He visualized basements below the units for efficient handling of cargo and its storage. By the use of low-level roads, ramps and baggage-lifts congestion of the main passenger floor would be avoided. Offices of the airline operators and airport authorities would occupy the first floor of such a building.

In conclusion the speaker pointed out the impossibility of covering all points of the unit handling system that he had outlined. Although not a new idea it was one which, to yield its fullest advantages, would have to be applied more completely than hitherto.

ROBERT KRONFELD

WITH the death of Robert Kronfeld on Thursday, February 12th, we in this country have lost not only one of the world's outstanding glider pilots but a generous, warm-hearted friend. It was the writer's good fortune to get to know Bobbie very well, and to appreciate his unfailing good humour whilst tackling problems which were, at that time, of vital urgency, was a tonic as well as an example which shamed one's own frustration at petty difficulties.

A recent photograph of the late S/L Kronfeld.

Born in Austria forty-four years ago, Robert Kronfeld first came to England with Sir Sefton Brancker in 1930. Four years later, after the murder of Chancellor Dolfuss, he made England his permanent home, and became general manager and C.F.I. of the Oxford University and City Gliding Club. Among the more notable of his gliding achievements was his two-way flight across the English Channel on June 20th, 1931, when he won the £1,000 prize offered by the *Daily Mail* for this feat.

In 1939 he became a naturalized Englishman, and on the outbreak of war he joined the Royal Air Force, attaining to the rank of Squadron Leader. Posted to the Airborne Forces Experimental Establishment, he became engaged on military glider development and for this work was awarded the A.F.C.

As a free-lance consultant and test pilot, Kronfeld was engaged under contract with General Aircraft, Limited, to undertake the test flying of the GAL 56 series of tailless gliders. It was in the 28 deg swept-back GAL 56/01 version of the type that he met his death. The flight was one of a series of comparative stall tests, and after take-off from Lasham airfield, towed behind a Halifax flown by S/L. Brownrigg, Kronfeld and his observer, Barry McGowan, were taken up to about 16,000 feet, at which altitude the glider was cast off.

Kronfeld carried out the first stall, and the glider spun out of this, but apparently made quite normal recovery. However, from the recovery, the aircraft dived and, during the dive, became inverted. Anti-spin parachutes were fitted, but were not used, even as air brakes, although the glider achieved a speed of about 220 m.p.h. Whilst inverted, Kronfeld said to his observer that he could do nothing with it. McGowan pulled back the hood and fell out. This occurred at about 1,000 feet and, although his parachute did not open until about 100 feet above the ground, McGowan landed in soft earth and was not injured Kronfeld did not leave the aircraft. The funeral service took place on February 17th at Golders Green.

THE S.B.A.C. DISPLAY

THOUGH after long negotiation between the Society of British Aircraft Constructors and the Ministry of Supply, the use of Farnborough for this year's "better-than-ever" S.B.A.C. display is still not officially conceded, there seems little doubt that the home of the Royal Aircraft Establishment will, in fact, be made available. The period is likely again to be early September, and there are high hopes of admitting the public on at least one day.

Four new jet fighters, a remarkably wide range of gas turbine units, two or three helicopters, and the Avro Shackleton four-Griffon reconnaissance aircraft are likely to be demonstrated, but there is scant hope of seeing a jet bomber.